Bowling Park Primary School

Learning Together, Achieving Together

Successful Learners
Confident Individuals
Responsible Citizens
together achieving learning together

Science

Science Vision and Design

Vision	**Responsible**	**Confident**	**Successful**
	We want our children to be responsible citizens by: - exploring, understanding and caring about the world around them. - becoming more aware environmental impact of human behaviour and sustainability. - understanding the impact and significance of science on society in the past, present and future.	**We want our children to be confident individuals by:** - learning to ask questions, observe and draw conclusions - building scientific vocabulary to enable children to articulate thoughts about science concepts. - developing oracy skills to help children work together successfully to plan, predict and evaluate.	**We want our children to experience success at Bowling Park and beyond by:** - applying maths skills to measure, record and interpret the results of experiments. - appreciating how human's knowledge has grown over time. - preparing them for the world of work, improving their life chances and ensuring they are prepared to contribute to life in modern Britain.

Design	**Igniting Curiosity**	**Developing Skills**	**Effective Communication**	**Building Aspiration**
	We know all children are naturally curious and we want to give them the opportunity to explore the world around them, develop and ask questions and understand how science can make a difference to our lives.	We use a range of practical tasks both inside and outside the classroom to enable all learners to experience the world around them. We focus on the working scientifically skills and draw attention to these in our learning sequences to ensure pupils can develop all the skills they need to become scientists of the future.	We want our children to become effective communicators . We provide a language-rich environment and explicit teaching of vocabulary to support our learners to be able to express their thoughts and ideas about science. We know that this focus on oracy and literacy will benefit them across the curriculum.	We know that science can make a difference to our world and our society. This gives the subject value to learners, and we want them to see themselves as the scientists of the future, making this world better for all.

A Scientist at Bowling Park

Characteristics of a scientist at Bowling Park	
	Curiosity to explore things which are familiar or unknown.
	An age appropriate/ developing understanding of scientific concepts across Biology, Chemistry and Physics.
	Confidence to use scientific vocabulary to make predictions and explain understanding of scientific concepts.
	Practical skills to learn how to follow instructions and safely use scientific equipment to record data in experiments
	Interpersonal skills to enable success in pair and group work when carrying out investigations.
	Critical thinking skills which develop the ability to ask perceptive questions, explain and analyse evidence.
	Maths skills to measure, record and interpret data.
	Appreciation that scientific knowledge and skills can be fundamental to solving future global challenges.

Science: The Journey

EYFS

- Changing seasons
- Animal adventures

Year Two

- Habitats
- Uses of everyday materials
- Plant growth
- Microhabitats
- Life cycles

Year Four

- Digestion and Food
- States of Matter
- Classification and changing habitats
- Electricity and circuits
- Sound and Vibration

Year Six

- Classifying big and small
- Evolution and Inheritance
- Light and refraction
- Circulation and Health
- Circuits, batteries and switches.

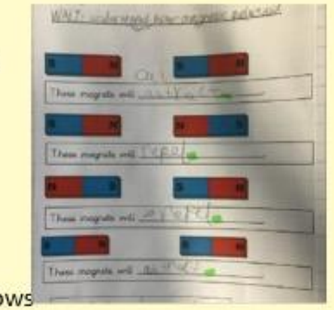
Our Science journey at Bowling Park

Year One

- Seasonal Changes
- Sensitive Bodies
- Comparing Animals
- Materials
- Plants

Year Three

- Movement and nutrition
- Rocks and Soil
- Plant Reproduction
- Forces and Magnets
- Light and Shadows



Year Five

- Mixtures and seperation
- Earth and Space
- Unbalanced Forces
- Properties and changes
- Life cycles and reproduction
- Human Timeline

Science Curriculum at Bowling Park

Year Group	Programme of Study
Year 1	Plants, Animals including humans, Everyday materials, Seasonal Changes
Year 2	Plants, Animals including humans, Living things and their habitats, Uses of everyday materials
Year 3	Plants, Animals including humans, Forces and magnets, Light, Rocks
Year 4	Animals including humans, Living things and their habitats, States of matter, Sound, Electricity
Year 5	Animals including humans, Living things and their habitats, Properties and changes of materials, Forces, earth and Space
Year 6	Animals including humans, Living things and their habitats, Evolution and inheritance, Light, Electricity

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Our journey could lead your child to…

Below are some jobs that children could aspire to in future scientific careers. We also recognise that many of the jobs our pupils will undertake in future may not yet exist yet, and so it is important to develop transferable skills that will be of use to them in future careers.

Jobs relating to medicine

- Audiologists - Work with children and adults who have hearing loss, tinnitus, or problems with balance.
- Clinical psychologist - Help people manage mental health issues, phobias and addiction.

Jobs that help care for our environment

- Meteorologists collect and study data from the atmosphere and oceans to make weather forecasts.
- Geologist - study the Earth's structure and formation above and below ground to explore natural processes and mineral resources.

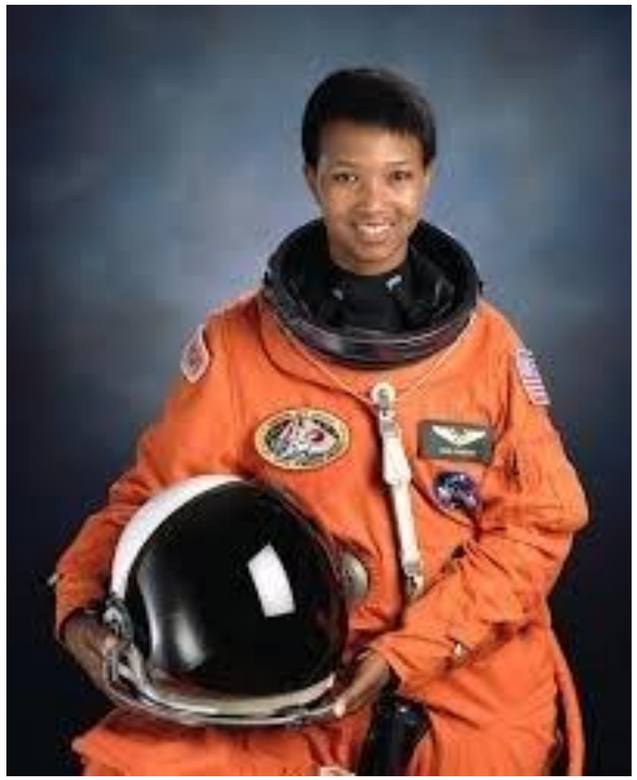
Jobs that help support the rule of law and justice

- Scene of crime officer – collect samples of evidence after a crime has been committed.
- Forensic scientists – prepare traces of physical evidence for use in courts of law

Jobs that help keep us fit and healthy and promote excellence in sport.

- Sports physiologist - Looks after the body during physical exercise.

We aim to raise the profile of real-life Scientists.



Ada Lovelace Mae Jemison Jane Goodall

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Vocabulary Progression

Year 1

Plants	Animals	Humans	Materials	Seasonal Changes
Leaf	Senses	Fish	Soft	Weather
Flower	Skeleton	Amphibian	Hard	Seasons
Blossom	Sight	Reptile	Rough	Temperature
Petals	Touch	Mammal	Smooth	Sunrise
Fruit	Taste	Bird	Stretchy	Sunset
Roots	Hearing	Skin	Stiff	
Seed	Smell	Scales	Shiny	
Branch		Fur	Dull	
Trunk		Feathers	Flexible	
Stem			Waterproof	

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Vocabulary progression

Year 2

Plants	Animals	Humans	Materials	Living Things and Their Habitats
Bulb	Offspring	Survival	See-through	Habitat
Shoot	Adult	Exercise	Transparent	Micro-habitat
Germinate	Survive	Healthy	Translucent	Food chain
Bud	Feeding	Unhealthy	Opaque	Environment
Soil	Drinking	Diet	Absorbent	Adaptation
Temperature	Breathing	Hygeine	Suitable	Shelter
Growth	Exercise		Unsuitable	
Flowering			Flexible	
Non-flowering			Rigid	

Vocabulary progression

Year 3

Plants	Animals	Humans	Rocks	Light	Forces and Magnets
Function	Vertebrate	Nutrition	Magma	Light	Force
Absorb	Invertebrate	Support	Lava	Dark	Attract
Nutrients	Nutrition	Protection	Metamorphic	Reflect	Repel
Life cycle	Skeleton	Movement	Sedimentary	Reflective	Magnetic
Pollen	Muscle	Spine	Igneous	Non-reflective	Non-magnetic
Pollination	Support	Ribcage	Crust	Shadow	Magnetism
Pollinator	Protection	Pelvis	Fossil	Source	Pole
Reproduce	Movement	Skull	Decay	Distance	Friction
Dispersal			Grains	Surface	Newton meter
			Crystals		

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Vocabulary progression

Year 4

Electricity	Animals	Humans	Sound	States of Matter	Living Things and Their Habitats
Appliance	Prey	Digestive system	Sound wave	Matter	Classify
Circuit	Predator	Digestion	Vibrate	Solid	Classification
Electricity	Producer	Incisor	Vibration	Liquid	Key
Cell	Consumer	Canine	Eardrum	Gas	Impact
Wire	Decomposer	Molar	High pitch	Evaporation	
Buzzer/Motor	Omnivore	Oesophagus	Low pitch	Evaporate	
Battery	Carnivore	Stomach	Volume	Condensation	
Switch	Herbivore	Intestine	Particle	Temperature	
Conductor	Energy	Rectum		Solidify	
Insulator	Nutrients	Anus			

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Vocabulary progression

Year 5

Forces	Animals	Humans	Earth and Space	Materials and Their Properties	Living Things and Their Habitats
Air / Water resistance	Gestation	Gestation	Axis	Insulator	Life cycle
Upthrust	Life expectancy	Embryo	Tilt	Conductor	Reproduce
Gravity		Foetus	Orbit	Thermal	Sexual reproduction
Springs		Childhood	Rotate	Reversible	Asexual reproduction
Lever		Adolescence	Rotation	Irreversible	Stamen
Torque		Puberty	Spherical	Dissolve	Carpel
Pulley		Life expectancy	Planet	Filter	Stigma
Gear		Reproduction	Solar system	Sieve	Pollen
Streamlined			Reflect	Solution	Fertilize
Mechanism				Soluble	Ovary

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Vocabulary progression

Year 6

Electricity	Animals	Humans	Light	Evolution and Inheritance	Living Things and Their Habitats
Electric current	Circulatory system	Circulatory system	Ray	Evolution	Characteristics
Positive	Blood vessel	Blood vessel	Absorb	Adaption	Micro-organism
Negative	Artery	Artery		Characteristics	Kingdom
Volts	Vein	Vein		Species	Category
Symbol	Cell	Cell		Generation	Phylum
	Oxygen	Oxygen		Identical	Class
	Nutrients	Nutrients		Inheritance	Order
	Organs	Organs		Variation	Family
		Disease			Genus
		Obesity			Species

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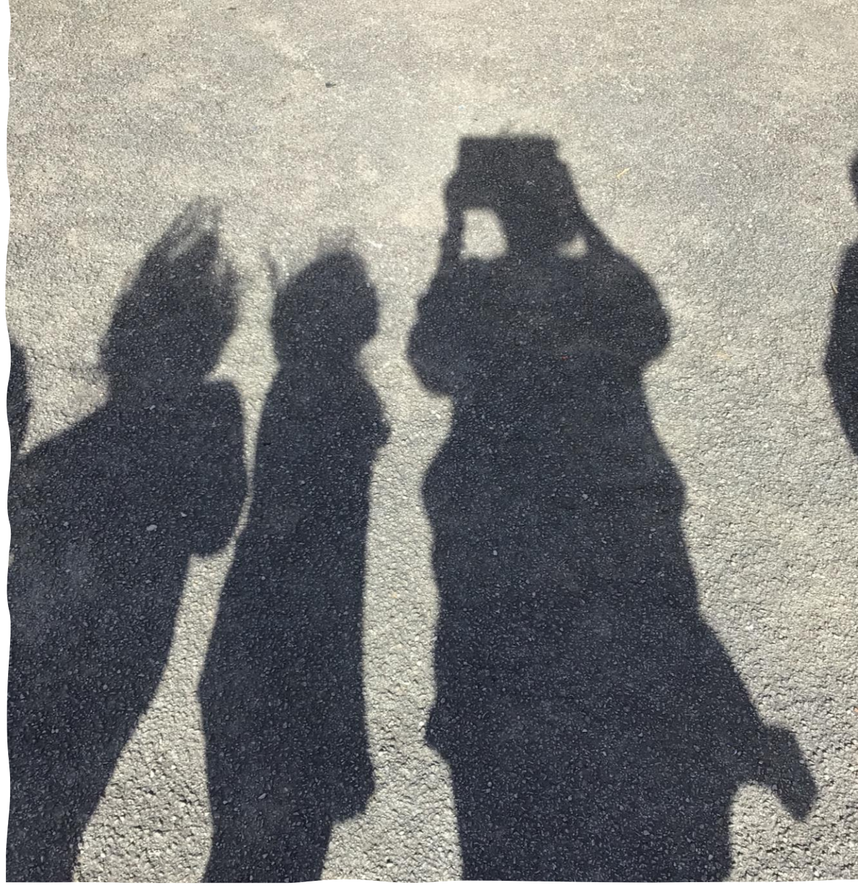
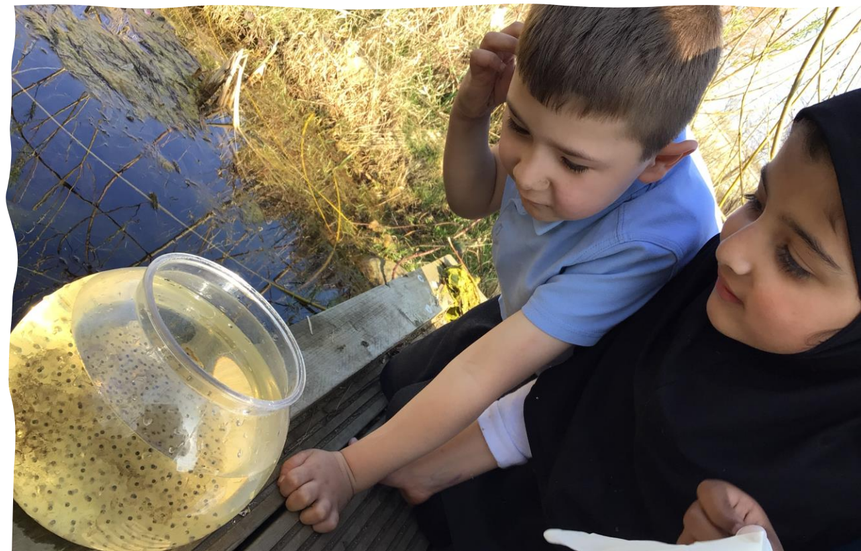
Exploring our world

We believe it is important for all children to develop curiosity and to experience the world around us in Science lessons. We know that this helps to bring learning to life and make it memorable for our pupils.

Our school offers many opportunities for experiences linked to science learning. We are lucky to have extensive grounds at our New Cross Street site and are developing Outdoor Learning areas to support learning across the curriculum in many subject areas.

We want to make the best of the facilities we have available and are working to have the appropriate resources available and to encourage teachers to be confident to take learning outside.



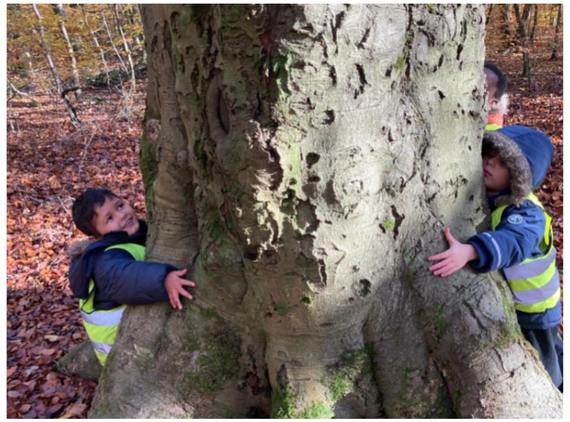


Examples to showcase our Science Curriculum

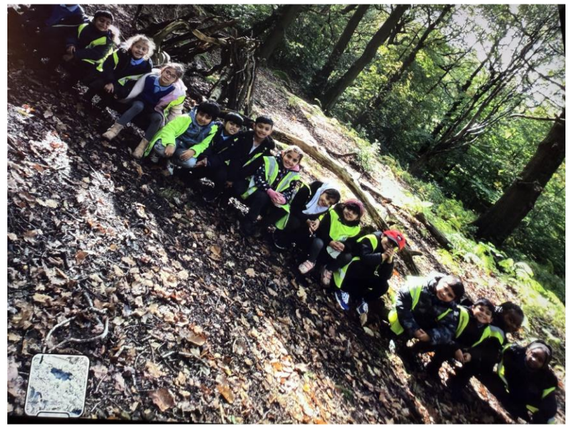
We believe it is important to supplement our classroom learning with trips and visitors to school to enable all children to have safe, valuable learning experiences.

Nursery – Allotment visit

Reception – Judy Woods



Year 1 – Shipley Glen



With butterfly releases, catching the moon, autumn walks, pumpkin picking, visits from a range of animals, rainy and snowy day walks in our community, there is something for all of us to get excited about!

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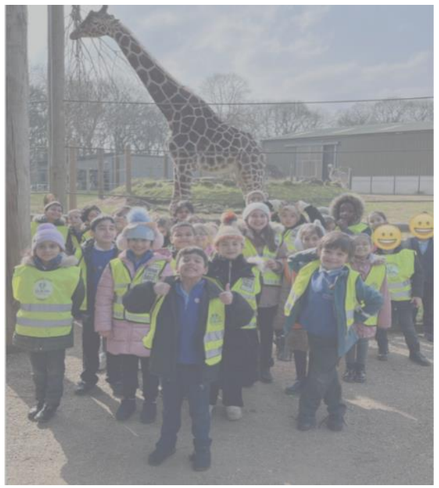
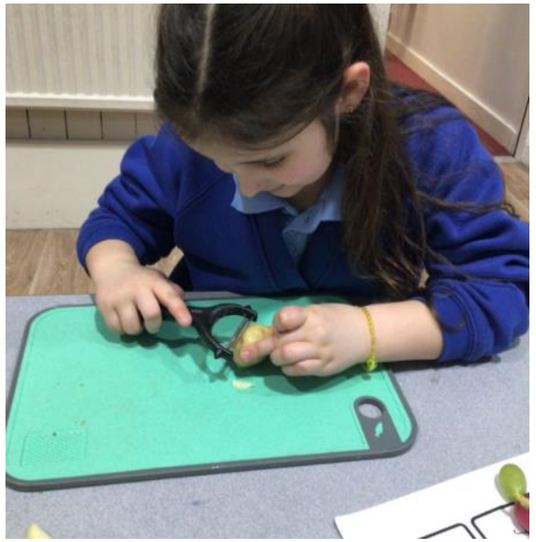
Examples to showcase our Science curriculum…

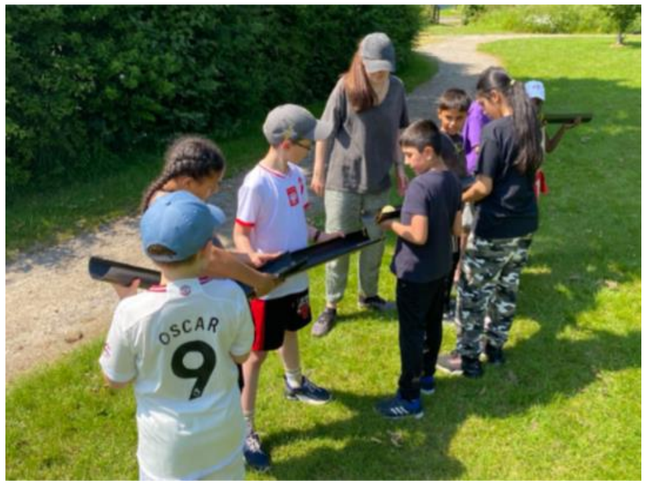
Year 2 – Yorkshire Wildlife Park



Year 3 – Restaurant visit



Year 4 – Nell bank



Alongside, making bug hotels, conducting lots of investigations and experiments, there is something for all of us to get excited about!

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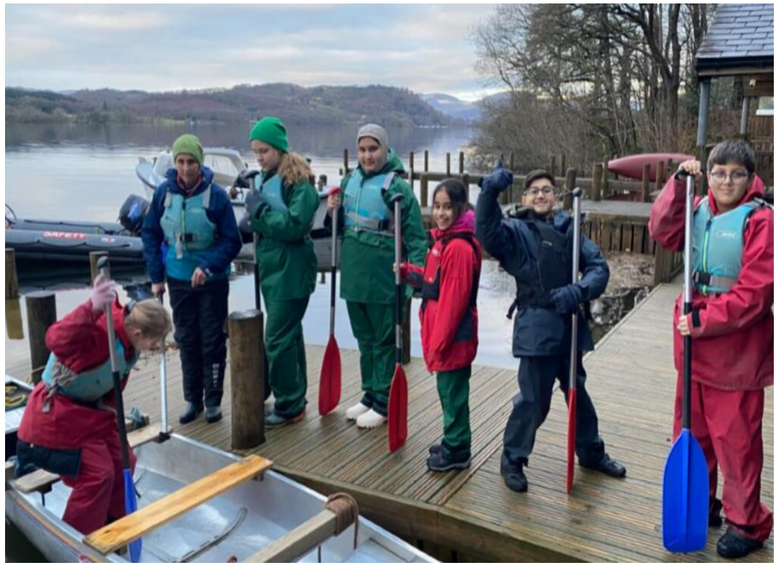
Examples to showcase our Science curriculum...

Year 5 – Visit from "Tech she can" - Relating to STEM and future job opportunities in engineering and future jobs.

Year 6 – World Museum visit and Ghyll Head.



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